Expanded Filter Date

Re: PDP-1D Arpanet software

Lars Brinkhoff

3/14/25

Paula Ash wrote:

> Well, I'll be. I do see some netcode mentions in the symbols for the 1973 listing. There seems to be provisions for NET01-16, NETADR, NETID...I assume these are for the ARPANET and associated hardware. Not sure if the software is intact.

As far as I can see, it's only a low level interface. Perhaps just shuffling 1822 messages between the IMP and a "net handler" that ran as a user space application. The net handler doesn't seem to be included in the listings. According to the Cosell notes, the NCP was implemented in the net handler.

Re: PDP-1D Arpanet software

Paula Ash

3/13/25

On Thu, Mar 13, 2025 at 12:16 PM Lars Brinkhoff via groups.io <lars=nocrew.org@groups.io> wrote:

> Paula Ash wrote:
> >> Oscar Vermeulen pointed out that parts of BBN's Exec III timesharing
> >> system for their PDP-1D is available online. It was an Arpanet host.
> > Was it?
>
> Do you mean, was it an Arpanet host? Yes, it's called BBN-1D in some
> host lists. It was serving functions for BBN's Network Control Center,
> such as sending out updated IMP software over the network. This was
> natural because it was the original computer for the IMP development
> toolchain.

Well, I'll be. I do see some netcode mentions in the symbols for the 1973 listing. There seems to be provisions for NET01-16, NETADR, NETID...I assume these are for the ARPANET and associated hardware. Not sure if the software is intact.

> > I have been busy with trying to get into engineering school...
>
> Best of luck!

Thanks! I'm in a bit of a lull period so I can help (for now).

Re: PDP-1D Arpanet software

Lars Brinkhoff

3/13/25

Ken Rector wrote:

> Since there isn't any evidence about what the Sigma 7 host-IMP might have looked like I have dreamed up something. Since I don't have a GORDO system this is based on CP-V. CP-V users may get excited about connecting it to the simulated ARPANET

This is the way.

> This is dreamware so far

Since so much ARPANET software has been lost, I think it's only fair to dream up new software. Historical accuracy goes out the window, of course.

Re: PDP-1D Arpanet software

Lars Brinkhoff

3/13/25

Paula Ash wrote:

> > Oscar Vermeulen pointed out that parts of BBN's Exec III timesharing system for their PDP-1D is available online. It was an Arpanet host.
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> Was it?

Do you mean, was it an Arpanet host? Yes, it's called BBN-1D in some host lists. It was serving functions for BBN's Network Control Center, such as sending out updated IMP software over the network. This was natural because it was the original computer for the IMP development toolchain.

> I have been busy with trying to get into engineering school...

Best of luck!

Re: PDP-1D Arpanet software

ken rector

3/13/25

Since there isn't any evidence about what the Sigma 7 host-IMP might have looked like I have dreamed up something.

Since I don't have a GORDO system this is based on CP-V. CP-V users may get excited about connecting it to the simulated ARPANET, or maybe the Internet after while.

What I've got so far is a CP-V system device handler and an IOS connected device that responds to SIO, TIO and other Sigma I/O instructions. The SIO passes a command list to a device and receive inputs from it. I have this running so far and a system generated with a device.

The device is serviced by a simh device simulator. This is dreamware so far, but the lower level will talk to the H316 using code from Rich Cornwells PDP10 simulator. My memory isn't the greatest and until I actually write some code I can't remember one great idea after I've thought of another.

Ken

Show quoted text

Re: PDP-1D Arpanet software

Paula Ash

3/13/25

> On Mar 13, 2025, at 12:17 AM, Lars Brinkhoff via groups.io <lars@...> wrote:
>
> Hello,
>
> Oscar Vermeulen pointed out that parts of BBN's Exec III timesharing
> system for their PDP-1D is available online. It was an Arpanet host. I
> scrutinized the listings and found there is there is networking code in
> there. The executive has an interrupt handler for channel 11 that is
> connected to the IMP interface. The executive calls out to a user-space
> "net handler" which supposedly implements the Arpanet NCP. Unfortunately
> this program may not have been preserved.
>
> This is what I learned in a few hours of digging around. If anyone
> can figure out anything else, I'm all ears.
>
> Scanned listings under "Relevant to Chapter 4":
> https://www.walden-family.com/bbn/
>
> Notes on the BBN PDP-1D:
> https://www.walden-family.com/bbn/issues-of-div6-imp-group-using-pdp1d-and-tenex/
>
> Best regards,
> Lars Brinkhoff

Was it? I had started looking through the listings awhile back. I collected and put it into a repo already. I had stumbled upon it while doing research for JOSS-II awhile back.

(Which, both are stalled, ATM. I have been busy with trying to get into engineering school...)

Re: PDP-1D Arpanet software

Lars Brinkhoff

3/13/25

Jim Allen wrote:

> In digging around for details on the IMP ARPANet interface, I located Bob Armstrong's H316 simulator on OpenSIMH. The code provides the networking front-end and emulates three H316's connecting to one another as ARPANet hosts.

Yes, I have built upon the work of Armstrong et al to connect Rich Cornwell's PDP-10 emulator to the emulated IMP network. I have been able to demonstrate TELNET connections out from and into ITS. I'm not sure everything else works, but it's a good start.

The IMP-host interface is specified by BBN Report 1822. There was great creativity in building the host side; e.g. there are at least five different IMP interfaces for the PDP-10 alone.

There's a rather meagre collection of Arpanet NCP implementations. For the PDP-10, we know of ITS, TENEX, WAITS, and TOPS-20AN. The PDP-11 has Unix (incomplete?), ELF, and NSWIT. There currently isn't much else. I'm not sure what the Multics people have, but maybe something.

Re: Sigma 9 and the LCM

al_kossow

3/13/25

On 3/13/25 7:19 AM, Jim Allen via groups.io wrote:

> Ken,
> The LCM's Sigma 9 sold for $30,240 at Christies (Lot #119) when the museum's collection was sold. I haven't been able to track down who actually made that bid but one source of mine who is in the collecting business suggested that it might have been either the Computer Museum of America/MIMMS (Atlanta) or System Source (Baltimore).

The CDC 160 was the only computer System Source acquired

Mimms isn't very interested in sharing things he acquired.

Re: Sigma 9 and the LCM

Jim Allen 3/13/25

Ken,

The LCM's Sigma 9 sold for $30,240 at Christies (Lot #119) when the museum's collection was sold. I haven't been able to track down who actually made that bid but one source of mine who is in the collecting business suggested that it might have been either the Computer Museum of America/MIMMS (Atlanta) or System Source (Baltimore).

Jim

Show quoted text

--
Jim Allen

Re: PDP-1D Arpanet software

Jim Allen 3/13/25

Lars,

In digging around for details on the IMP ARPANet interface, I located Bob Armstrong's H316 simulator on OpenSIMH. The code provides the networking front-end and emulates three H316's connecting to one another as ARPANet hosts. Might be a good resource...

See https://github.com/open-simh/simh/blob/master/H316/tests/00readme.txt
Jim

On 3/13/2025 2:17 AM, Lars Brinkhoff wrote:

Show quoted text

--
Jim Allen

Re: Sigma 9 and the LCM

al_kossow

3/13/25

On 3/12/25 7:09 PM, ken rector via groups.io wrote:

> I'm trying to track down some SDS Sigma software in hopes of resurrecting the GORDO Time Sharing System used at UCLA for the first ARPANET experiments.
> I have files from a tape from the Xerox User Group with a couple of pieces of GORDO and part of the XPL compiler.
> Some time ago the Living Computer Museum in Seatle bought a Sigma 9 system including a number of tapes.
> Could anyone help me track down where that stuff may have gone?
> Ken Rector
> Woodland Hills CA

There is a preservation effort going on wrt Livermore operating systems
Contact James Donnelley <science@...>

He should be aware of anything that survives.

"I was the project leader for the development of a very unusual "network" operating system, "NLTSS", that ran production on the 'super'computers at LLNL from about 1984-1995:

I believe the above system was the last of a generation of OSs developed in academic or R&D institutions. As such it represents an ambitious (perhaps overly) sort of architecture that has no place in the sorts of OSs developed for the industrial purposes of the likes of Microsoft, Apple, and Google.

The generation of people who worked on such systems is aging out. Some of us are trying to preserve some digital artifacts from such work. One concern is making such content as 'easy' to archive as possible. We're working on getting the source code for the NLTSS system out of the complex classification/security system at LLNL. We're also working on making the various forms of documentation (local documentation, professional papers, etc.} available in forms that can be effectively archived."

They may be sympathetic to preservation of earlier systems like Octopus and GORDO (I didn't even know LLL HAD a Sigma 7 or that Butler was
involved)

Re: Sigma 9 and the LCM

ken rector 3/13/25

Also RFC7 where someone asked about the GORDO availablity.

Show quoted text

Re: Sigma 9 and the LCM

ken rector 3/13/25

Thanks, Lars.

I'm in touch with Kelly Booth who worked on GORDO at LLL in those days. He told me pretty much the same thing about renaming GORDO to SEX.

When I read about SEX initially I thought it might be the SDS diagnostic tool, System Exerciser which was called SEX at SDS. It's much more interesting about the GORDO version.

GORDO was developed as a graphics timesharing system and seems to have been accessed through vector graphics terminals. It had a Fortran and an XPL compiler. The XPL compiler and some GORDO code was contributed to the SDS User Group Library in May, 1973. A paper describing GORDO was presented at the FJCC in Las Vegas in 1968. A GORDO reference manual is in the collection of the Computer History Museum.

I have a portion of the User Group tape that includes the XPL Compiler itself, a Command Line Interpreter in Sigma assembly language and a memory dump of the GORDO system. Gordo is composed of three important sections, an A-System with privilege code mapped 1-1, a B-System of mapped code for user space and a Master, command interpreted as sort of a shell.. I'm am missing the B-System. The reference manual includes a description of B-System functions, but it is incomplete.

There are other user group tapes that are unreadable just now, and there is another that is missing.

It is my hope to get enough of this stuff together to run GORDO on simh.

Ken

Show quoted text

Re: Sigma 9 and the LCM

Lars Brinkhoff

3/13/25

RFC 11 "Implementation of the Host - Host Software Procedures in GORDO"

https://www.rfc-editor.org/rfc/rfc11.html

PDP-1D Arpanet software

Lars Brinkhoff

3/13/25

Hello,

Oscar Vermeulen pointed out that parts of BBN's Exec III timesharing system for their PDP-1D is available online. It was an Arpanet host. I scrutinized the listings and found there is there is networking code in there. The executive has an interrupt handler for channel 11 that is connected to the IMP interface. The executive calls out to a user-space "net handler" which supposedly implements the Arpanet NCP. Unfortunately this program may not have been preserved.

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Best regards,
Lars Brinkhoff

Re: Sigma 9 and the LCM

Lars Brinkhoff

3/13/25

Ken Rector wrote:

> I'm trying to track down some SDS Sigma software in hopes of resurrecting the GORDO Time Sharing System used at UCLA for the first ARPANET experiments.

I have usually heard it said the UCLA Sigma-7 was running a timesharing system called SEX. But looking it up, I they used GORDO initially and renamed it later. I learned this from Steve Crocker:

"I was in the MIT-AI lab from Feb 1967 to May 1968. I went back to UCLA, where I had been an undergraduate, for the summer but wound up staying. The head of the group, professor Gerald Estrin, had procured an SDS Sigma 7. It had a batch processing system, which seemed to me completely inappropriate for a computer research laboratory. I proposed to Estrin that we build a time-sharing system based on ITS. He agreed and we formed a group to build the software. We got the project started. It turned out to be somewhat harder than I had initially estimated, so it was taking a while. Somewhere along the way we learned there was already a time-sharing system for the Sigma 7 at Lawrence Livermore Lab. They called it GORDO. Butler Lampson had helped design it and it was up and running. We asked the LLL folks if we could use it too. They were very cooperative, so we abandoned our porting project and shifted to GORDO. After we made several changes to GORDO for our environment, we decided we could give our version its own name. We discussed names patterned after Tenex, e.g. Sigma X, Seven X, etc. and settled on SEX."

Re: Sigma 9 and the LCM

Michael Thompson

3/12/25

Probably the Mimms Technology and Art museum.

Show quoted text

Sigma 9 and the LCM

ken rector

3/12/25

I'm trying to track down some SDS Sigma software in hopes of resurrecting the GORDO Time Sharing System used at UCLA for the first ARPANET experiments.

I have files from a tape from the Xerox User Group with a couple of pieces of GORDO and part of the XPL compiler.

Some time ago the Living Computer Museum in Seatle bought a Sigma 9 system including a number of tapes.

Could anyone help me track down where that stuff may have gone?

Ken Rector
Woodland Hills CA

Re: Is there a list

Christian Gauger-Cosgrove 3/11/25

Hello Philip,

On Tue, 11 Mar 2025 at 13:39, Philip Freidin via groups.io
<philip@...> wrote:

> Your RSTS-11 automated system build looks like the result of a lot of work on making it easy to run and generate a working system, especially for someone like me with minimal experience with SIMH. I really appreciate your effort.

Thank you. I try to make the turnkeys as close to actual "turnkey" operation as possible. It can be an experience using the SIMH "EXPECT" scripting system. (For any user that wants to experience Hell™, I welcome you to look at the "install" file in the VAX/VMS kit; I haven't had to use so many GOTOs and horrid spaghetti flow since I had to program a robot arm in Mitsubishi MELFA-BASIC...)

> The build took about 10 minutes. My system is Windows 7 Pro x64, and I used 7ZIP to unpack rsts10.tar.xz to a TAR file, and 7ZIP to unpack the TAR file to /dist and /dist/cmd

RSTS/E goes pretty quickly, luckily. If you're planning to use the VAX/VMS kit, it'll be much longer (which is a given, as there's an order of magnitude more stuff installed in the VMS turnkey; also because it has to run throttled lest VAX C's IVP throw a fit and break).

For the readers who want to know: the intended operation for the kits I produce is to just decompress the archive file(s) on Linux (I use Debian, for anyone who wants to know) with tar (also works with WSL on Windows 10, in fact I actually compressed the archives using WSL on my Windows 10 desktop) —
For the RSTS/E turnkey that would just be:
tar -xvJf rsts10.tar.xz
For the VAX/VMS turnkey it would be:
tar -xvJf vms47.tar.xz

tar -xvJf vms47_media.tar.xz
— which creates a "rsts10" folder (or "vms47" folder for the VMS kit). And run everything from within that folder.

That way everything is self-contained, and if you want to get rid of the turnkey at some point, you can just "rm -r" the top-level turnkey folder.

As for doing it the Windows way; yes, use 7-Zip, it's much preferred. As for decompressing the kits, as quick and easy as the context menu option is, use the 7-Zip graphical interface (context menu option in Windows would be "Open Archive"), navigate into the .tar file so you see the respective folder, and just extract the said rsts10 (or vms47) folder to your desired location.

I would personally prefer to distribute the turnkey kits using 7-Zip archives (it's a one click extract on Windows and on Linux it's equally easy as "7z x foo.7z" on the command line), but I know not everyone has a system with 7-Zip, so I compromised in using .tar.xz format. ("Why not .tar.gz/.tgz format?" Because the VMS media kit exploded in size (because of the CONDIST CDs...) and almost ate the remainder of the disk space on my friend's VPS where I host my site.)

Anyway, all that tangential blathering aside, let's look at the actual problem:

> %SIM-ERROR: HK0: RK07 container created by the PDP-11 simulator is incompatible with the HK device on the PDP-11 simulator
> %SIM-ERROR: HK1: RK07 container created by the PDP-11 simulator is incompatible with the HK device on the PDP-11 simulator

I presume you're using the Mark P. simh/simh version, and not the Open SIMH Steering Group open-simh/simh version.

That's your primary issue. You'll want to use open-simh:
<https://github.com/open-simh/simh>

And for reference for anyone else using the kits I made: I only use open-simh... and right now a private branch of open-simh of my own (that is just me trying to add the ability to change the VAX 86xx and VAX-11/78x simulator's serial numbers to the simulators).

Regards,
Christian
--
Christian M. Gauger-Cosgrove
STCKON08DS0
Contact information available upon request.

Re: Is there a list

Tony Lawrence

3/11/25

LOL welcome to the club of non-FOSS simh users!

I suggest you use the open-source simh from:

https://opensimh.org/
https://github.com/open-simh/simh

And never see this problem ever again!

Or, you can use the "ZAP" command to strip that piece of good footer from the disk image.
But keep in mind that any time you'd want to use the disk image, you can face the same issue again.

HTH

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